Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Continental Resources, Inc.
Well Name/Number: Cochrane 1-11H
Location: SW SW Section 11 T25N R55E
County: Richland **, MT; Field (or Wildcat)** W/C (Bakken Horizontal)

Air Quality

(possible concerns)
Long drilling time: No, 30 to 35 days drilling time.
Unusually deep drilling (high horsepower rig): Triple derrick drilling rig to drill a 19,643'MD/10,098'TVD single lateral Bakken formation horizontal well test.
Possible H2S gas production: Slight, chance of H2S gas production.
In/near Class I air quality area : No not in a Class I air quality area.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
X Air quality permit (AQB review)
X Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____

Comments: No special concerns – 19,643'MD/10,098'TVD single lateral Bakken formation horizontal well.

Water Quality

(possible concerns)
Salt/oil based mud: Yes, freshwater and freshwater mud system on surface hole and oil based invert mud system on mainhole. Saltwater for horizontal sections.
High water table : No high water table anticipated.
Surface drainage leads to live water: No, closest drainages are unnamed ephemeral tributary drainages to Hay Coulee, about1 /8 of a mile to the west and ¼ of a mile to the south from this location.
Water well contamination : No, deepest water wells nearby are between 21' and 215' in depth. Closest water well is about 7/8 of a mile to the southeast from this location. All other wells are 1 mile and further from this surface location. Surface hole will be drilled with freshwater and freshwater muds to a depth of 1900'. Surface casing will be cemented to surface from a depth of 1900'.
Porous/permeable soils: No, sandy clay soils.
Class I stream drainage : No Class I stream drainages in this area.

Mitigation:
X Lined reserve pit
X Adequate surface casing
__ Berms/dykes, re-routed drainage
__ Closed mud system
__ Off-site disposal of solids/liquids (in approved facility)
__ Other: _____

Comments: 1900' of surface casing cemented to surface adequate to protect freshwater zones.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: No, stream crossings anticipated.
High erosion potential : No, small cut, up to 9.8' and small fill, up to 6.1', required.
Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: No, 500'X270' location size required.
Damage to improvements: Slight
Conflict with existing land use/values: Slight, surface use is cultivated fields.

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
_X_ Stockpile topsoil
__ Stream Crossing Permit (other agency review)
_X_ Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
__ Other _____

Comments: Access will use existing county roads, #330. New constructed road, about 365' into location. Cuttings will be buried on site in the lined reserve pit. Oil based invert drilling fluids will be recycled. Completion fluids will be recycled or hauled to a commercial disposal for injection. Pit will be allowed to dry and will be solidified with subsoils and clays before being covered with clean subsoil and topsoil. No special concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: None nearby, closest residence is 1 mile and further in any direction from this wellsite.
Possibility of H2S: Slight chance of H2S.
Size of rig/length of drilling time: Triple drilling rig/short 30 to 35 days drilling time.

Mitigation:
_X_ Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: Adequate surface casing and operational BOP should mitigate any problems. No concerns.

Wildlife/recreation

(possible concerns)
Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: None identified.
Creation of new access to wildlife habitat : No
Conflict with game range/refuge management : no
Threatened or endangered Species: Species identified as threatened by the USFWS are Pallid Sturgeon, Interior Lease Tern, Piping Plover and Whooping Crane. Species

listed as candidate species are the Greater Sage Grouse and Spragues Pipit. NH tracker website for this Township and Range lists no species of concern.

Mitigation:
__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other:_____
Comments: Private cultivated fields. No live water nearby. No concerns

Historical/Cultural/Paleontological

(possible concerns)
Proximity to known sites None identified
Mitigation
__ avoidance (topographic tolerance, location exception)
__ other agency review (SHPO, DSL, federal agencies)
__ Other:_____
Comments: On private cultivated fields. No concerns

Social/Economic

(possible concerns)
__ Substantial effect on tax base
__ Create demand for new governmental services
__ Population increase or relocation
Comments: On private cultivated fields. No concerns

Remarks or Special Concerns for this site

Well is a 19,643'MD/10,098'TVD single lateral Bakken formation horizontal well.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term surface impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki
(title:) Chief Field Inspector
Date: March 22, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Richland County water wells
(subject discussed)

March 22, 2011
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Richland County
(subject discussed)

March 22, 2011
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T25N R55E
(subject discussed)

March 22, 2011
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: _____
Others present during inspection: _____